MONTHLY REPORT

ON

THE PROGRESS OF THERAPEUTICS.

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BY

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REPORT ON THE PROGRESS OF THERAPEUTICS.

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From the Edinburgh Medical Journal for March 1876.

CHLORAL.—(*a.*) *Physiological Action.*—Rokitansky affirms that chloral is a direct heart poison, but only when concentrated; it reduces the irritability of the respiratory centres, and also of the vasomotor centres.—*Stricker's Jahrbücher*, 1875.

Musculus and De Merme have discovered a curious acid in the urine after the ingestion of chloral hydrate. It is precipitated by basic acetate of lead, and forms stellate crystals like those of tyrosine. It decomposes carbonates with effervescence, and salts of it are not affected by acetic acid. It is soluble in water and alcohol, but not in ether. Salts of copper, silver, and bismuth are reduced by it, and it decolorizes sulphate of indigo. All its salts, except the basic lead salt, are soluble in water, but not in absolute alcohol. The discoverers propose to call it urochloralic acid.—*Comptes Rendus*, 1875.

(*b.*) *As a Surgical Dressing.*—Prof. Marc Sée strongly advocates the employment of a one-per-cent. aqueous solution of chloral as a surgical dressing. Whenever fœtidity has to be destroyed, fermentation, putrefaction, or the production of vibriones, etc., to be arrested, it fulfils the indication with certainty and inoffensiveness. —*Jl. de Thérapeutique*, 25th July 1875.

Mr Lucas, of Guy's Hospital, has given chloral an extensive trial as an application to sloughing wounds and fœtid ulcers. The effect of the local application appears to be that of a powerful stimulant and disinfectant; it has no soothing or sedative effect on the part to which it is applied, but gives rise to considerable pain, which lasts some time. It never becomes absorbed in sufficient quantity to act as a hypnotic, and its local application is therefore eminently safe and free from the dangers which

sometimes follow the use of carbolic lotion long continued. He has found a solution of four grains of chloral in an ounce of water to be the most useful.—*Lancet*, 16th Oct. 1875.

Dr C. A. Peabody recommends a solution of from three to five grains of chloral in an ounce of water, as a substitute for carbolic acid for external use. It acts promptly in ulcers. In cases of amputation, where the surfaces took on an unhealthy action, the application of the solution changed the character within twenty-four hours. It removes fœtor, stimulates granulation, is clean, and does not stain.—*Canada Medical Record*, 1875.

In the *Edinburgh Medical Journal*, Feb. 1876, is a paper by Dr William Craig, on the value of solution of chloral as a preservative fluid for anatomical specimens, and as a dressing for wounds and ulcers.

(*c.*) *In Fissure of the Anus.*—Créquy treats fissure of the anus by chloral. His procedure is as follows: Charpie, soaked in a two-per-cent. solution of chloral, is inserted just within the anus, daily attention being of course duly paid to the regularity of the bowels. In the two cases recorded as having been so treated, a cure was effected within a fortnight.

(*d.*) *In Cerebral Rheumatism.*—M. Bouchut records three cases of cerebral rheumatism which he treated successfully by chloral hydrate. He gave from forty to eighty grains in one or two doses closely repeated.—*Bull. Gen. de Thér.*, 12th Nov. 1875.

(*e.*) *In Sea-Sickness.*—Dr Obet finds that chloral is by far the best remedy for sea-sickness. It was first recommended for this affection by Dr Giraldes. On the first day of the voyage, sleep should be at once secured by administering fifteen grains of the chloral at a single dose, and the following days twenty or thirty grains may be given during the day in small hourly doses. As a general rule, two or three days will suffice to accustom passengers thus treated to the sea.—*Archiv de Med. Navale*, June 1875.

(*f.*) *In Cholera.*—Surgeon A. R. Hall, of the U. S. Army Medical Department, treats cholera in the cold stage by hypodermic injections of chloral. He uses a solution of 10 grains dissolved in 100 drops of water, and of this he injects from 10 to 20 minims in the arms. Beyond a slight pain and hardness at the point of puncture, there was no local evidence, twelve hours afterwards, of the injection having been made. Improvement of the temperature of the surface, and in the general appearance, abolition of cramps, and resumption of the urinary secretion, followed the adoption of this treatment in every case. Only one of fourteen cases died, and in this one the treatment was not carried out efficiently. Chloral hydrate, Mr Hall says, acts as a sedative to the vaso-motor system, and thus relieves the spasm of the involuntary muscular fibre, and brings the stage of collapse to an end.—*New Rem.*, Oct. 1875.

(*g.*) *In Labour.*—Dr C. A. Prentiss states that the following are the effects of chloral in labour:—It conduces to a quiet and

tranquil mind; abridges the duration and modifies the severity of each pain; promotes pleasant and refreshing sleep in the intervals of pain; relaxes the os, and so abridges the duration of labour. He gives 5 grains every fifteen minutes in the first stage, until 20 or 30 grains have been given. In four or six hours, more may be given, if the labour continues and the remedy be indicated. He considers the induction of anæsthesia by chloral to be unsafe and unnecessary.—*Hay's American Journal of Medical Science*, Jan. 1876.

(*h.*) *In Puerperal Convulsions.*—Portal records three cases of puerperal convulsions successfully treated by chloral. They were all subjects of albuminuria. 90 grains of chloral were given in each case.—*Bull. Gen. de Thérapeutique*, 15th August 1875.

(*i.*) *In Cancer of the Uterus.*—Dr Fleischer uses chloral locally in carcinoma uteri. He first washes out the vagina thoroughly, and then passes up to the cancerous surface some cotton-wool, wetted with a solution of chloral (2 drachms to 3 ounces of water); this application is repeated every two hours. After a few applications the pain is moderated, and the discharge becomes less offensive.—*Med. Chir. Centralblatt*, ix., 1875.

(*j.*) *As an Anæsthetic for Children.*—M. Bouchut stated at the Brussels Congress that he obtains anæsthesia in children with from 45 to 60 grains of chloral at one dose. The child soon goes to sleep, and anæsthesia is complete in about one hour. No such result can be obtained with adults.—*Bull. Gen. de Thérapeutique*, 30th October 1875.

(*k.*) *Strychnine as an Antidote.*—A case of poisoning by chloral is recorded in the *Centralblatt f. d. Med. Wissench.*, 3d April 1875. A man had taken about 370 grains. Artificial respiration and faradization proving useless, two injections subcutaneously, one of 0·003 grammes of strychnine, and a second of 0·002 grammes, were made. The result of this treatment was, that thirty-two hours after the poisoning, he awoke fresh and free from all ill effects. The fact that the stomach was full when the poison was taken would account for the circumstance that no gastritis resulted.

In the *Pharmaceutical Journal*, 21st and 28th August 1875, are communications from Mr J. Gilbert Candy and Mr W. S. Greaves, in which they record experiments on dogs which afford evidence of the antidotal power of chloral over strychnine.

Ergot.—(*a.*) *A New Alkaloid from Ergot.*—M. C. Tanret details a process by which he has succeeded in extracting a new alkaloid, which he terms ergotinine. It exists in ergot in very small quantity, and is extremely unstable. Its most characteristic reaction is its coloration with moderately concentrated sulphuric acid; the colour is at first a yellowish red, and ultimately becomes an intense violet blue. Ergotinine is strongly alkaline, and capable of saturating acids, forming salts, which quickly become red on exposure to air. —*Comptes Rendus*, vol. lxxxi. p. 896.

(*b.*) *Effects of the Aqueous and Alcoholic Solutions of Ergot.*—The Committee on Therapeutics of the Chicago Society of Physicians and Surgeons report as follows respecting the aqueous and alcoholic solutions of ergot:—They differ in their effects on the circulatory system. The aqueous solution excites the activity of the cardiac inhibitory centres, and the vaso-motor centre in the medulla; it slackens the pulse, narrows the calibre of the small arteries, and increases the blood-pressure. Very large doses paralyze the heart at once, and so effectually that the induced galvanic current fails to restore it to action. These effects are not produced by the alcoholic solution. The latter produces symptoms akin to those of acro-narcotic poisoning—viz., irritation of the mucous membrane of the stomach and bowels, tonic cramps, and agitative violent spasms.—*New Remedies*, 1875.

(*c.*) *Effect on the Mammary Secretion.*—Dr J. Sehtscherbinkenhoff observed that, during an epidemic of ergot poisoning, there was frequently a cessation of the flow of milk in nursing women as soon as the symptoms of ergotism appeared. He was thus led to administer ergot in cases of accumulation of milk in the breasts, and even in actual inflammation of the glands. His results were perfectly successful. He found that, at the time of weaning, ergot caused a speedy cessation of the lacteal secretion.—*Centralblatt für Chirurg.*, 8th May 1875.

(*d.*) *In Acute Mania.*—Dr Van Andel uses, in acute mania, hypodermic injections of ergotin dissolved in alcohol and glycerine. He believes that it acts beneficially by contracting the cerebral vessels.—*New Remedies*, July 1875.

(*e.*) *In Enteric Fever.*—M. Hayem finds that, in enteric fever, ergot acts satisfactorily as an antipyretic. Under the influence of this drug, he finds that the defervescence is much more rapid than when sulphate of quinine or digitalis is used. The dose administered varied from 30 to 50 grains in the twenty-four hours.—*Rev. de Thér.*, 1st October.

(*f.*) *In Pneumonia.*—Dr Wycisk was led to employ ergot in cases of croupous pneumonia on account of the contractile influence exerted by that drug on the vessels. The effect of the ergot in all cases was to diminish the amount of the exudation. In large infiltrations, in emphysema, or in exhausted or decrepit individuals, the employment of ergot might prove hazardous.—*Allg. Med. Central Zeitung.*

(*g.*) *In Diabetes Insipidus.*—Prof. Sydney Ringer, in the *British Medical Journal*, 25th December 1875, records a well-marked case of diabetes insipidus which was uninfluenced by jaborandi, whilst on three occasions the quantity of urine was very greatly reduced by ergot.

(*h.*) *In Uterine Fibroids.*—Hildebrand states that the treatment of uterine fibroids by hypodermic injection of ergot is most likely to be successful:—1. When the tumour is richly provided with

muscular tissue, and possesses the consistence and feel of a tense elastic cyst. 2. When the tumour is submucous. 3. When the walls of the uterus are sound, capable of vigorous contraction, not too much attenuated by dilatation, or stiffened by exudation in their substance, and when there is no para- or peri- metritis present. 4. As soon as the chronic metritis and parametritis, which often accompany fibroid tumours, have been removed by proper preparatory treatment, when the previously-mentioned conditions again come into force. 5. When the tumour is unprovided with a capsule, and merges directly without a boundary into the peculiar tissue of the uterus.—*American Journal of Obstetrics*, Feb. 1875.

(*i.*) *In Cystic Paralysis.*—Dr J. Williamsky determined experimentally that in dogs and rabbits, ergot causes immediate temporary contraction of the bladder. He consequently employed it in the form of injections of the fluid extract in two cases of cystic paralysis, and with very successful results.—*Clinic*, May 1875.

(*j.*) *In Internal Hæmorrhoids.*—Dr Orr reports that he treats internal hæmorrhoids very successfully by rectal injections daily of half a drachm of the fluid extract of ergot, dissolved in an ounce of water.—*Clinic*, April 1875.

(*k.*) *In Epistaxis.*—Dr George St George, of Lisburn, states that he has found the internal administration of ergot of great value in the treatment of epistaxis. He generally gives the liquid extract in fifteen-drop doses every quarter of an hour until the hæmorrhage ceases.—*British Medical Journal*, 1st January 1876.

Gelsemium.—(*a.*) *Physiological Action.*—Drs Ringer and Murrell prove experimentally that paralysis of the reflex and voluntary power is not due to the action of the drug on the muscles or on the motor nerves, but that by its direct action on the spinal cord it destroys reflex power, and, probably by its influence on the cord, loss of voluntary power is produced. They conclude that gelsemium probably exerts no influence on the motor nerves. While testing the effects of large doses of this drug on the heart, they found that it produced well-marked tetanus. The tetanus induced by strychnia differs from that resulting from gelsemium in the following particulars:—1. Strychnia tetanus supervenes without previous loss of voluntary or reflex power. 2. Respiration continues unimpaired during the paroxysms. 3. Every part of the body is affected, the anterior extremities as strongly as the posterior. 4. The cord is much less rapidly exhausted; thus a fresh paroxysm could be excited directly the previous one had declined, and in this way it could be reproduced many times without any interval or apparent diminution of intensity. 5. Strychnia tetanus persists for many hours, or even for several days.

Gelsemium tetanus, on the other hand—1. Is always preceded by considerable loss of voluntary and reflex power. 2. Respiration

ceases before the onset of the convulsion. 3. The posterior extremities are most affected. 4. Irritation fails to excite another paroxysm till the lapse of some seconds, as if the exhausted cord required time to renew its energy. 5. It lasts only a short time; sometimes only half-an-hour, rarely more than three hours.

The authors infer that the tetanic convulsions are due to the action of gelsemium on the spinal cord. They draw particular attention to the curious fact that the tetanus is always preceded by considerable loss of voluntary and reflex power. The question arises, Does the plant contain a single active principle which first paralyzes and then tetanizes, or does it contain two agents, one capable of paralyzing, the other of exciting the cord? The authors incline to the latter view. In Mr Gerrard's preparation of the alkaloid, the tetanizing agent exists in larger proportion, whilst the paralyzing agent predominates in the liquid extract. The tetanizing agent produces its effects rather more tardily than the paralyzing agent. Thus, in employing the same proportion of each preparation of identical strength, a small dose of the alkaloid will exert less paralyzing effect than the equivalent dose of liquid extract; whilst, with a large dose of the alkaloid, the tetanizing principle is able to overcome the depression of the cord produced by the paralyzing principle; but as the action of the tetanizing agent comes on later, we get first paralysis and then tetanus. On the other hand, in using the liquid extract when the paralyzing agent is in excess of the tetanizing ingredient, small doses paralyze more completely than the corresponding quantity of the alkaloid solution; whilst large doses of the liquid extract, like fifty minims, produce paralysis so profound that the tetanizing ingredient fails to produce its characteristic effect.

As gelsemium so profoundly depresses the functions of the cord, the authors thought that it would prevent or arrest the tetanic convulsions produced by strychnia. They experimentally determined that such was the case.—*Lancet*, 25th Dec. 1875, and 15th and 22d Jan. 1876.

Dr J. Ott gives the following summary of the physiological effects of gelsemia:—1. In cold-blooded animals, it paralyzes, first the sensory ganglia, and then the motor ganglia, in the central nervous system. This order is reversed in warm-blooded animals. 2. It diminishes the pulse and blood-pressure. 3. The decrease in the pulse rate is due to lessened irritability of the excito-motor ganglia of the heart. 4. The fall of pressure is due to diminution of cardiac irritability and vaso-motor tonus. 5. It decreases the respiration through a paralyzing action on the respiratory centres. 6. It dilates the pupils. 7. It reduces the temperature.—*Phil. Med. and Surg. Reporter*, 11th Dec. 1875.

(*b.*) *As an Antineuralgic.*—Dr A. Jurasz of Heidelberg speaks highly in favour of gelsemium as an antineuralgic. In one case, which was that of a man who suffered from neuralgia of the first

branch of the fifth nerve on the right side, and in which quinine, given internally, and veratria ointment applied externally, failed to afford relief, the administration of five-drop doses of the tincture every eight hours procured perfect and permanent relief in the course of three days. In a case of brachial neuralgia, one of sciatica, and in two cases of trigeminal neuralgia, it yielded satisfactory results. It failed, however, in a case of hemicrania of long duration, and in two cases of muscular rheumatism.—*Centralblatt f. d. Med. Wiss.*, No. 31, 1875.

In a paper by Dr Spencer Thomson, in the *Lancet* for 6th Nov. 1875, on the rapid relief of neuralgic pain, he states that he has used gelsemium in at least forty cases with almost constant success. His experience is, that the remedial power of the drug seems confined to those branches of the trifacial nerve supplying the upper and lower jaw, more particularly the latter, and more especially when the pain is referred to the teeth or alveoli. Gelsemium exercises no effect whatever on frontal pain.

In the *Practitioner* for August 1875, Dr James Sawyer writes that he has rarely found gelsemium fail to give decided and lasting relief in cases of neuralgic pains in the face and jaws associated with carious teeth. He usually gives 15 minims of a tincture prepared as follows:—Take of gelsemium root coarsely powdered 2 oz., of rectified spirit 20 oz. Moisten the root with 10 oz. of the spirit, and allow the mixture to stand for twenty-four hours. At the end of that time, pack in a percolator, and add the remaining 10 oz. of spirit. When the fluid has ceased to flow, remove the contents of the percolator and press them. Add the pressed liquid to that obtained by percolation, filter, and make up with rectified spirit to a pint. Eleven minims of this tincture are equal to about one grain of the root.

(*c.*) *For the Relief of Cough.*—Dr J. Roberts Thomson advocates the employment of tincture of gelsemium for the relief of cough. In the cases enumerated by him, he usually gives it in five-minim doses, with the effect of affording great relief. In cases characterized by much bronchial irritation, the gelsemium may be advantageously combined with bromide of ammonium, tincture of squill, syrup of codeia, etc.—*Brit. Med. Jour.*, 16th Oct. 1875.

In the *Pharmaceutical Journal*, 18th Dec. 1875, and 1st, 15th, and 29th Jan. 1876, is an exhaustive *résumé* by Mr Holmes of what has hitherto been written concerning the history, botanical characters, medicinal properties and uses, medicinal preparations, dosage, and chemical composition of gelsemium.

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